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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/655,767	09/05/2003	Yong Yao	88508.0001	6895

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EXAMINER	
DUPUIS, DEREK L	
ART UNIT	**PAPER NUMBER**
2883	

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/655,767	YAO ET AL.	
	Examiner	Art Unit	
	Derek L Dupuis	2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☒ Claim(s) *1-10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the term "multi-ch" used throughout the specification should apparently be "multi-channel".

Appropriate correction is required.

2. The abstract of the disclosure is objected to because the term "multi-ch" should apparently be "multi-channel". Correction is required. See MPEP § 608.01(b).

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Multi-channel transceiver module".

Claim Objections

4. Claims 1-10 are objected to because of the following informalities: the term "multi-ch" should apparently be "multi-channel". Appropriate correction is required.

5. Claim 1 is objected to because of the following informalities: there is a lack of antecedent basis for the limitation "the received multi-ch optical signals" in lines 2 and 3 of the claim. This should apparently be "received multi-ch optical signals". Appropriate correction is required.

6. Claim 6 is objected to because of the following informalities: the limitation "pullout the multi-ch" should apparently be "pullout of the multi-channel". Appropriate correction is required.

7. Claim 8 is objected to because of the following informalities: the limitation "set at a printed circuit board" should apparently be "set on a printed circuit board". Appropriate correction is required.

8. Claim 10 is objected to because of the following informalities: the limitation "the multi OSA are" should apparently be "the multi-channel OSA units are" and the limitation "the fixed board" should apparently be "a fixed printed circuit board". Also, the word "relate" is not clear and should be removed from the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by ***Kim et al. (US 6,729,771 B2)***.

11. Regarding claim 1, Kim et al teach a multi-channel optical transceiver module comprising a plurality of optical subassemblies (OSA) for transforming received multi-channel optical signals into multi-channel electrical signals and transforming multi-channel electrical signals into multi-channel optical signals for transmission (see column 2, lines 22-67 and column 4, lines 25-49). The module also includes a plurality of special signal processing IC units for disposing the multi-channel electrical signals received form the plurality of OSA units and for inputting multi-channel electrical signals to the plurality of OSA units for transmission (see column 6, lines 31-36). The module also comprises an electrical connector unit for outputting multi-channel electrical signals disposed by the special signal processing IC unit and for

providing received multi-channel electrical signals to the special signal processing IC units for disposal (see column 2, lines 57-69 and column 5, lines 10-33).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Kim et al (US 6,729,771 B2)*** as applied to claim 1 above, and further in view of ***Norton (US 6,604,685 B1)***.

14. Regarding claim 2, Kim et al teach a multi-channel optical transceiver module as discussed above in reference to claim 1. Kim et al do not teach that the module includes a MPU. However, Norton teaches an optical transceiver module comprising an OSA unit and a signal processing unit (logic circuits) (see column 4, lines 20-35). Norton also teaches that the module includes a MPU for monitoring operation status of the OSA unit and of the signal processing unit so as to send out monitoring information. It would have been obvious to one of ordinary skill in the art at the time of invention to use the MPU taught by Norton to monitor the operational status of the plurality of OSA units and of the plurality of signal processing units in the optical transceiver taught by Kim et al for the purpose of allowing the transceiver module to have the capability of managing and storing data in memory and to compute complex algorithms (see column 2, line 64 to column 3, line 9 of Norton). Kim et al also suggests in line 52 of column 5 that a micro-controller can be used in the transceiver module. Norton teaches in column 2, line

64 to column 3, line 9 that a micro-controller and a micro-processor have similar usefulness in the art of optical transceiver devices.

15. Regarding claim 3, Kim et al in view of Norton teach a multi-channel optical transceiver module as discussed above in reference to claim 2. Norton further teaches that an EEPROM can be used to record the information (see column 6, lines 36-42 of Norton).

16. Claims 4-6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Kim et al (US 6,729,771 B2)*** in view of ***Norton (US 6,604,685 B1)*** as applied to claim 3 above, and further in view of ***Yonemura et al (US 2001/0024551 A1)***.

17. Regarding claim 4, Kim et al in view of Norton teach a multi-channel optical transceiver module as discussed above in reference to claim 3. Neither Kim et al nor Norton teach that the module includes an ESD grounding unit for shielding EMI. Yonemura et al teach an optical transceiver module including a cover with a grounding terminal (see paragraph 11). It would have been obvious to one of ordinary skill in the art at the time of invention to use the ESD grounding cover unit taught by Yonemura et al to shield the EMI aroused by the electrical connector unit of the transceiver device taught by Kim et al in view of Norton. Motivation to do this would be to reduce the effects of EMI noise (see paragraph 11 of Yonemura et al).

18. Regarding claim 5, Kim et al in view of Norton and in further view of Yonemura et al teach a multi-channel optical transceiver module as discussed above in reference to claim 4. Kim et al teach that the plurality of OSA units are disposed on an IC chip that comprises an optoelectronic device (see column 4, line 66 to column 5, line 9). Kim et al also teach that the IC chip upon which the plurality of OSA units are mounted is in turn mounted onto a frame which is

then precisely aligned so as to optically connect the plurality of OSA units with a plurality of optical fibers mounted within a ferrule (see column 6, lines 11-31).

19. Regarding claim 6, Kim et al in view of Norton and in further view of Yonemura et al teach a multi-channel optical transceiver module as discussed above in reference to claim 5. Kim et al teach that the transceiver module includes a module case comprising an upper case (54) and a lower case (45) as shown in figure 6. A handle (47) is attached to the lower case and to the upper case for easy plug-in or pullout of the module from a device.

20. Regarding claim 8, Kim et al in view of Norton and in further view of Yonemura et al teach a multi-channel optical transceiver module as discussed above in reference to claim 6. Kim et al teach that the signal processing circuits are placed on a carrier assembly which is a flex circuit section that is part of the printed circuit board (see column 2, lines 33-67 of Kim et al). Yonemura et al also shows that all of the components of an optical transceiver module can placed on a printed circuit board (see figures 2, 10 and 11 of Yonemura et al). It would have been obvious to one of ordinary skill in the art at the time of invention to place the EEPROM, the MPU, and the signal processing chips on a printed circuit board as taught by Yonemura et al for the purpose of being able to mass-manufacture the devices on a printed circuit board separately from the other components thus making the module less costly.

21. Regarding claims 9 and 10, Kim et al in view of Norton and in further view of Yonemura et al teach a multi-channel optical transceiver module as discussed above in reference to claim 8. The printed circuit boards taught by Kim et al is fixed to the casing as shown in figure 5. The printed circuit board taught by Yonemura et al is fixed to the casing though the connectors (22

and 42) shown in figure 2. Kim et al also teach that the plurality of OSA units are disposed on the carrier assembly portion of the flexible circuit board.

22. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over ***Kim et al (US 6,729,771 B2)*** in view of ***Norton (US 6,604,685 B1)*** and in view of ***Yonemura et al (US 2001/0024551 A1)*** as applied to claim 6 above, and further in view of ***Wike, Jr. et al (US 5,256,865)***.

23. Regarding claim 7, Kim et al in view of Norton and in further view of Yonemura et al teach a multi-channel optical transceiver module as discussed above in reference to claim 6. Neither Kim et al, Norton, nor Yonemura et al teach that there is an indicator light to indicate the operational status of the transceiver module. Wike, Jr. et al teach an optical sensor including multiple indicator lights to indicate the operational status of the device based on monitored information (see column 4, lines 4-14). It would have been obvious to one of ordinary skill in the art at the time of invention to use the indicator lights taught by Wike, Jr. et al on the front face of the optical transceiver module as taught by Kim et al in view of Norton and in view of Yonemura et al for the purpose of representing valid or invalid operation of the device (see column 4, lines 11-14 of Wike, Jr. et al).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derek L Dupuis whose telephone number is (571) 272-3101. The examiner can normally be reached on Monday - Friday 8:30am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Derek L. Dupuis
Examiner
Group Art Unit 2883

12/22/04